

approximately two percent longer than the central member. Each buffer tube, as well as the core interstices, shall be flooded with a filling compound to minimize water entry and migration. The compound shall be stable, moisture resistant, non-toxic, electrically non-conducting and compatible with all other cable components.

No fibre splices are allowed in a length of completed cable.

FO Cables shall be given buckle resistance by a glass reinforced plastic (GRP) rod or equivalent, through the center of the cable. An Aramid wrap and/or E-glass yarn and polyester tape around the buffer tubes provides tensile strength.

The inner and outer sheath material shall be LSZH Flame Retardant compound. Wherever required, the FO cable design shall also be fire resistant to IEC 60331.

All outdoor FO cables shall have a twisted steel wire armour in addition to the dual jacketing structure.

The cable shall be designed so that the fibers will not be stressed when the cable is installed with a minimum bending radius of 25 cm.

Fibre Optic Cable shall have fibre colours and buffer tube colours in accordance with EIA/TIA-598.

## **11.2 Direct Burial Fibre-Optic Cables**

In addition to the requirements above, fibre-optic cables intended for direct burial shall have a secondary lead sheath, or equivalent multi-layer sheath.

### **11.2.1 Lead Sheath / Multi-layer Sheath**

The lead sheath or multilayer sheath shall provide a barrier against moisture, chemicals, water, solvents, environment and hydrocarbon oil attacks.

All onshore underground buried cables shall be provided with Lead Sheath as a moisture and chemical barrier in accordance with BS EN 50288 and shall comply to EEMUA 133 for lead quality. Alternatively, Aluminum/high density polyethylene/polyamide (AL/HDPE/PA) multi-layer inner sheath can be acceptable subject to COMPANY prior approval. VENDOR shall provide 'Type Test' certificates, from a test house acceptable to COMPANY, for AL/HDPE/PA multi-layer inner sheath cables to validate degree of ingress protection against water, organic and non-organic chemicals.

### **11.2.2 Bedding Layer**

The bedding layer shall be provided between lead sheath and armour for underground cables.

The material of construction for the bedding layer shall be same as that of the inner sheath material.

### **11.2.3 Steel Wire Armour**

Armored cable shall have Galvanized Steel Wire Armour under outer sheath.

The galvanized steel wire armour shall comply to requirements of EN 10257-1 and, EN 10218-1.

The coating of steel wire shall comply with the requirements of EN 10244-2.

### **11.2.4 Outer Sheath**

Outer sheath material shall be minimum PVC or better and comply with this specification requirements. Outer sheath shall be Low Smoke Zero Halogen Flame Retardant Compound. Outer sheath shall be